

tion; then all the Colours in the World must be such as constantly ought to arise from the original colorific qualities of the rays whereof the Lights consist by which those Colours are seen. And therefore if the reason of any Colour what-ever be required, we have nothing else to do then to consider how the rays in the Sun's Light have by reflexions or refractions, or other causes been parted from one another, or mixed together; or otherwise to find out what sorts of rays are in the Light by which that Colour is made, and in what proportion; and then by the last Problem to learn the Colour which ought to arise by mixing those rays (or their Colours) in that proportion. I speak here of Colours so far as they arise from Light. For they appear sometimes by other causes, as when by the power of phantasy we see Colours in a Dream, or a mad Man sees things before him which are not there; or when we see Fire by striking the Eye, or see Colours like the Eye of a Peacock's Feather, by pressing our Eyes in either corner whilst we look the other way. Where these and such like causes interpose not, the Colour always answers to the sort or sorts of the rays whereof the Light consists, as I have constantly found in what-ever Phenomena of Colours I have hitherto been able to examin. I shall in the following Propositions give instances of this in the Phenomena of chiefest note.

PROP.

PROP. VIII. PROB. III.

By the discovered Properties of Light to explain the Colours made by Prisms.

Let ABC represent a Prism refracting the Light of Fig. 12. the Sun, which comes into a dark Chamber through a Hole F ϕ almost as broad as the Prism, and let MN represent a white Paper on which the refracted Light is cast, and suppose the most refrangible or deepest violet making rays fall upon the space P π , the least refrangible or deepest red-making rays upon the space T γ , the middle sort between the Indico-making and blue-making rays upon the space Q χ , the middle sort of the green-making rays upon the space R ϵ , the middle sort between the yellow-making and orange-making rays upon the space S σ , and other intermediate sorts upon intermediate spaces. For so the spaces upon which the several sorts adequately fall will by reason of the different refrangibility of those sorts be one lower than another. Now if the Paper MN be so near the Prism that the spaces P T and $\pi \gamma$ do not interfere with one another, the distance between them T π will be illuminated by all the sorts of rays in that proportion to one another which they have at their very first coming out of the Prism, and consequently be white. But the spaces P T and $\pi \gamma$ on either hand, will not be illuminated by them all, and therefore will appear coloured. And particularly at P, where the outmost violet-making rays fall alone, the Colour must be the deepest violet. At Q where the violet-making and indico-making rays are mixed, it must

Q

must